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| 09/806,103      | 03/28/2001  | Takahiro Hayashi     | 33388               | 5430             |

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EXAMINER

FOX, BRYAN J

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2686

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Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/806,103

Applicant(s)

HAYASHI ET AL.

Examiner

Bryan J Fox

Art Unit

2686

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 6-9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama (US005493604A) in view of Azartash, et al. (WO9921343A1) and further in view of Takahashi (JP411027352A).

Regarding claim 1, Hirayama discloses a foldable mobile telephone with a receiving section 1, which reads on the claimed "upper case" and a calling section 2 which reads on the claimed "lower section" (see column 2, lines 18-20 and figure 1). The receiving section 1 includes volume adjust buttons 14 and a display 13 (see column 2, lines 23-26 and figure 1), which reads on the claimed "display"; the combination of volume adjust buttons, an input to the phone and the display, an output from the phone reads on the claimed "I/O section". The receiving section 1 also includes an antenna 11 (see column 2, lines 21-22 and figure 1), which reads on the claimed "RF communication section". These components are mounted on a hard upper casing 1. The calling section 2 includes function buttons 22 (see column 2, lines 26-28 and figure 1), which read on the claimed "operation section", a battery 26 (see column 2, lines 30-

31 and figure 1), which read on the claimed "battery" and ten keys 21 (see column 2, lines 52-54 and figure 1) which read on the claimed "keyboard". The components in the calling section are mounted on the keyboard. Hirayama does not disclose a vibration section located in the upper casing.

Azartash, et al. discloses a Portable Telephone with a vibrator in the upper casing of the phone as described on page 3, lines 21-22, which reads on the claimed "vibrator section" located on the upper part of the telephone.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to add the above vibrator to Hirayama in order to silently alert users of a phone call.

The combination of Azartash et al. and Hirayama fails to expressly disclose including a control processing section in the upper portion of the telephone.

Takahashi discloses a foldable mobile telephone with a processing circuit board 19 in the upper portion of the phone (see figure 1), which reads on the claimed "upper case including a control processing section".

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Hirayama and Azartash et al. with Takahashi to include the above processing circuit board in the upper portion of the telephone in order to perform normal processing functions such as suppressing power consumption as suggested by Takahashi (see abstract).

Regarding claim 6, the above combination of Hirayama, Azartash et al. and Takahashi fails to disclose a viewport.

Azartash, et al. discloses a foldable telephone where the display is seen through the viewing window 44 in the folded state on the lower case 36, which reads on the claimed "view port" and can be seen in figure 5.

It would be obvious to one skilled in the art at the time of the invention to modify the above combination of Hirayama, Azartash and Takahashi to include the above viewing window as taught by Azartash, et al., in order to allow the use of the display for such functions as caller ID while in the folded state.

Regarding claim 7, the combination of Hirayama, Azartash et al. and Takahashi discloses a viewing window 44 disclosed by (see Azartash figure 5), which reads on the claimed "view port" is positioned between the microphone 40 and the keypad 32 which reads on the claimed "key operation section" and can be seen in figure 5.

Regarding claim 8, the combination of Hirayama, Azartash et al. and Takahashi further discloses a transparent or clear window 44 or 12 (see Azartash et al. page 1, lines 32-34).

Regarding claim 9, the combination of Hirayama, Azartash et al. and Takahashi discloses a transparent window 12 with a magnifying lens (see Azartash et al. page 1, line 38 and page 2, lines 1-2), which reads on the claimed "lens function".

Regarding claim 15, Hirayama discloses a foldable mobile telephone with a receiving section 1, which reads on the claimed "upper case" and a calling section 2 which reads on the claimed "lower section" (see column 2, lines 18-20 and figure 1) coupled by a hinge 3 (see column 2, lines 18-21 and figure 1), which reads on the claimed "upper case and a lower case which is hinged to the upper case". The

receiving section 1 includes volume adjust buttons 14 and a display 13 (see column 2, lines 23-26 and figure 1), which reads on the claimed "display"; the combination of volume adjust buttons, an input to the phone and the display, an output from the phone reads on the claimed "I/O section". The receiving section 1 also includes an antenna 11 (see column 2, lines 21-22 and figure 1), which reads on the claimed "RF communication section". These components are mounted on a hard upper casing 1. The calling section 2 includes function buttons 22 (see column 2, lines 26-28 and figure 1), which read on the claimed "key operation section", a battery 26 (see column 2, lines 30-31 and figure 1), which read on the claimed "battery" and ten keys 21 (see column 2, lines 52-54 and figure 1) which read on the claimed "keyboard". The components in the calling section are mounted on the keyboard. Hirayama does not disclose a vibration section located in the upper casing.

Azartash, et al. discloses a Portable Telephone with a vibrator in the upper casing of the phone as described on page 3, lines 21-22, which reads on the claimed "vibrator section" located on the upper part of the telephone.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to add the above vibrator to Hirayama in order to silently alert users of a phone call.

The combination of Azartash et al. and Hirayama fails to expressly disclose including a control processing section in the upper portion of the telephone.

Takahashi discloses a foldable mobile telephone with a processing circuit board 19 in the upper portion of the phone (see figure 1), which reads on the claimed "upper case including a control processing section".

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Hirayama and Azartash et al. with Takahashi to include the above processing circuit board in the upper portion of the telephone in order to perform normal processing functions such as suppressing power consumption as suggested by Takahashi (see abstract).

2. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Hirayama, Azartash et al. and Takahashi as applied to claim 1 above, and further in view of Morgenthaler (US006310609B1).

Regarding claim 2, the above combination of Hirayama, Azartash et al. and Takahashi discloses a display 13 that is a liquid crystal display (see Hirayama column 2, line 23), which reads on the claimed "liquid crystal display", located in the receiving section 1 which reads on the claimed "upper case". The combination of Hirayama, Azartash et al. and Takahashi also discloses buttons below the display (see Azartash et al. figure2), however it is not expressly disclosed that the buttons are used for navigating a menu.

Morgenthaler discloses a mobile phone with three keys 136, 138 and 140 to allow the user to move through the complicated menu scheme by pressing soft key 140 to select the menu, then moving the cursor 130 within that menu using the indexing key

136 and selecting a particular menu entry by pressing the other soft key 138 (see column 1, line 66 – column 2, line 5 and figure 1).

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Hirayama, Azartash et al. and Takahashi with Morgenthaler to include the above menu navigation in order to make the device more user friendly.

3. Claims 3 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama in view of Azartash, et al. and Takahashi and as applied to claim 1 above, and further in view of Takagi et al. (US005235636A) and Hitachi document (JP06268724A).

Regarding claim 3, the combination of Hirayama, Azartash, et al. and Takahashi fails to disclose a flexible connector/key board.

Takagi et al. discloses a portable telephone with a flexible printed circuit board 8 that is a keyboard.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to include the above flexible keyboard in order to aid in manufacturability and increase portability.

The combination of Hirayama, Azartash, et al, Takahashi and Takagi does not disclose that the flexible keyboard be used as a connecting board between upper and lower phone portions.

The Hitachi document discloses a folding telephone with a flexible printed circuit board assembly connecting the transmitter, which reads on the claimed "upper casing", and receiver, which reads on the claimed "lower casing" as described in the abstract.

It would be obvious to one skilled in the art to modify the combination of Hirayama, Azartash, et al, Takahashi and Takagi to extend the flexible keyboard into a connecting board in the application of a folding mobile telephone as taught in the Hitachi document in order to conserve space and create a more flexible folding telephone. After the combination is made, the resultant flexible keyboard/connecting board would read on the claimed "keyboard arranged and accommodated in the lower case is a flexible board" and "the flexible board shares its use as a connecting board".

Regarding claim 16, the combination of Hirayama, Azartash, et al. and Takahashi fails to disclose a flexible connector/key board.

Takagi et al. discloses a portable telephone with a flexible printed circuit board 8 (see column 2, lines 15-20 and figure 2) that is a keyboard.

It would have been obvious to a person of ordinary skill in the art at the time of the invention to include the above flexible keyboard in order to aid in manufacturability and increase portability.

The combination of Hirayama, Azartash, et al, Takahashi and Takagi does not disclose that the flexible keyboard be used as a connecting board between upper and lower phone portions.

The Hitachi document discloses a folding telephone with a flexible printed circuit board assembly connecting the transmitter, which reads on the claimed "upper casing",

and receiver, which reads on the claimed "lower casing" as described in the abstract, together reading on the claimed "a portion of said flexible board which is located at the hinge portion of the upper and lower case is used as a connecting a connecting board fro connecting the upper case and the lower case".

It would be obvious to one skilled in the art to modify the combination of Hirayama, Azartash, et al, Takahashi and Takagi to extend the flexible keyboard into a connecting board in the application of a folding mobile telephone as taught in the Hitachi document in order to conserve space and create a more flexible folding telephone.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama in view of Azartash, et al, Takahashi, Takagi et al. and the Hitachi document as applied to claim 3 above and further in view of Ikenouchi, et al. (US005835863A).

Regarding claim 4, the combination of Hirayama, Azartash et al, Takahashi, Takagi et al. and the Hitachi document discloses a portable telephone set with a battery pack 26 which reads on the claimed "battery terminal", a mouth piece<sup>12</sup>, which reads on the claimed "microphone", and ten keys 21 which read on the claimed "key diaphragm" mounted on the calling section, which reads on the claimed "lower case" (see Hirayama figure 1). The calling section is one of two sections of the folding-up type portable telephone, so all the above are inherently folded before storing. The combination of Hirayama, Azartash et al, Takahashi, Takagi et al. and the Hitachi document does not disclose an LED for keys.

Ikenouchi, et al. discloses a wireless telephone with light-emitting diodes for illumination in column 2, line 23, which reads on the claimed "LED for keys".

It would be obvious to one skilled in the art at the time of the invention to combine the above LEDs disclosed in Ikenouchi, et al. with the combination of Hirayama, Azartash, et al, Takahashi, Takagi et al. and the Hitachi document in order to provide illumination for use in the dark and increase visibility of the keys.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama in view of Azartash, et al. and Takahashi as applied to claim 1 above, and further in view of Kubo.

Regarding claim 5, the combination of Hirayama, Azartash, et al. and Takahashi fails to disclose an inclined microphone.

Kubo discloses a portable telephone with a microphone 14 that is inclined as can be seen in figure 1.

It would be obvious to one skilled in the art to modify the combination of Hirayama, Azartash, et al. and Takahashi as applied to claim 1 to include the above inclined microphone disclosed in Kubo, in order to bring the microphone closer to the mouth when in use and improve the sound input into the microphone.

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama in view of Azartash, et al. and Takahashi as applied to claim 1 above, and further in view of Roloff (DE019723338A1).

Regarding claim 10, the combination of Hirayama, Azartash et al. and Takahashi fails to include a narrowing of the phone casing in the vicinity of the portion connecting upper and lower casings.

Roloff discloses an inflatable handset 14 that is narrower in the center as can be seen in figure 1.

It would be obvious to one skilled in the art at the time of the invention to modify the combination of Hirayama, Azartash, et al. and Takahashi to include the above narrowing of the handset in the vicinity of the connection of upper and lower boards as taught by Roloff, in order to conform better to the grip of a hand.

7. Claims 11 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama in view of Weissshappel, et al. and further in view of Tamura and Takahashi.

Regarding claim 11, Hirayama discloses a portable telephone that folds which reads on the claimed "foldable mobile communication terminal". Hirayama also discloses a receiving section 1, which reads on the claimed "upper case" and a calling section 2 which reads on the claimed "lower section". The receiving section 1 includes volume adjust buttons 14 and a display 13 which reads on the claimed "display"; the combination of volume adjust buttons, an input to the phone and the display, an output from the phone reads on the claimed "I/O section". Hirayama also discloses an antenna 11, which reads on the claimed "RF communication section". These components are mounted on a hard upper casing 1. The calling section 2 includes function buttons 22 which read on the claimed "operation section", a battery 26 which read on the claimed "battery" and ten keys 21 which read on the claimed "keyboard". The components in the calling section are mounted on the keyboard. Hirayama does not disclose the location of a vibration section or I/O connector.

Weisshappel, et al. discloses a portable electronic device with an external connector 304 which, as described in column 5, lines 21-23, may be used to couple the portable radiotelephone to a hands free user interface, thus requiring input and output and reading on the claimed "I/O connector". Furthermore the external connector is located on the lower portion of the foldable phone. It would be obvious to one skilled in the art to add an external connector to the phone claimed by Hirayama in order to allow use of a hands free user interface. The combination of Hirayama and Weisshappel, et al. does not disclose a vibration section located in the lower casing.

Tamura discloses a portable telephone with a vibrator 7, which reads on the claimed "vibrator section" located on the lower part of the folding telephone (see abstract and figure a).

It would be obvious to one skilled in the art at the time of the invention to include the above vibrator 7 as taught by Tamura in combination of Hirayama and Weisshappel, et al. in order to silently alert users of incoming calls. The combination of Hirayama, Weisshappel et al. and Tamura fails to teach the inclusion of a control processing section in the upper section.

Takahashi discloses a foldable mobile telephone with a processing circuit board 19 in the upper portion of the phone (see figure 1), which reads on the claimed "upper case including a control processing section".

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Hirayama, Weisshappel et al. and Tamura with Takahashi to include the above processing circuit board in the upper portion of the

telephone in order to perform normal processing functions such as suppressing power consumption as suggested by Takahashi (see abstract).

Regarding claim 17, Hirayama discloses a portable telephone that folds which reads on the claimed "foldable mobile communication terminal". Hirayama also discloses a receiving section 1, which reads on the claimed "upper case" and a calling section 2 which reads on the claimed "lower section" coupled together by a hinge 3 (see Hirayama column 2, lines 18-21 and figure 1). The receiving section 1 includes volume adjust buttons 14 and a display 13 which reads on the claimed "display"; the combination of volume adjust buttons, an input to the phone and the display, an output from the phone reads on the claimed "I/O section". Hirayama also discloses an antenna 11, which reads on the claimed "RF communication section". These components are mounted on a hard upper casing 1. The calling section 2 includes function buttons 22 which read on the claimed "key operation section", a battery 26 which read on the claimed "battery" and ten keys 21 which read on the claimed "keyboard". The components in the calling section are mounted on the keyboard. Hirayama does not disclose the location of a vibration section or I/O connector.

Weissappel, et al. discloses a portable electronic device with an external connector 304 which, as described in column 5, lines 21-23, may be used to couple the portable radiotelephone to a hands free user interface, thus requiring input and output and reading on the claimed "I/O connector". Furthermore the external connector is located on the lower portion of the foldable phone. It would be obvious to one skilled in the art to add an external connector to the phone claimed by Hirayama in order to allow

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use of a hands free user interface. The combination of Hirayama and Weissshappel, et al. does not disclose a vibration section located in the lower casing.

Tamura discloses a portable telephone with a vibrator 7, which reads on the claimed "vibrator section" located on the lower part of the folding telephone (see abstract and figure a).

It would be obvious to one skilled in the art at the time of the invention to include the above vibrator 7 as taught by Tamura in combination of Hirayama and Weissshappel, et al. in order to silently alert users of incoming calls. The combination of Hirayama, Weissshappel et al. and Tamura fails to teach the inclusion of a control processing section in the upper section.

Takahashi discloses a foldable mobile telephone with a processing circuit board 19 in the upper portion of the phone (see figure 1), which reads on the claimed "upper case including a control processing section".

It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the combination of Hirayama, Weissshappel et al. and Tamura with Takahashi to include the above processing circuit board in the upper portion of the telephone in order to perform processing functions such as suppressing power consumption as suggested by Takahashi (see abstract).

8. Claims 12 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama in view of Weissshappel, et al, Tamura and Takahashi and further in view of The Hitachi document and Takagi, et al.

Regarding claim 12, the combination of Hirayama, Weissshappel, et al, Tamura and Takahashi fails to disclose a flexible connector/key board.

Takagi et al. discloses a portable telephone with a flexible printed circuit board 8 that is a keyboard (see figure 2 and column 2, lines 14-20).

It would be obvious to one skilled in the art at the time of the invention to include the above flexible keyboard as taught by Takagi et al. in the combination of Hirayama, Weissshappel, et al, Tamura and Takahashi in order to aid in manufacturability and increase portability. The combination of Hirayama, Weissshappel, et al, Tamura, Takahashi and Takagi, et al. does not disclose that the flexible keyboard be used as a connecting board between upper and lower phone portions.

The Hitachi document discloses a folding telephone with a flexible printed circuit board assembly connecting the transmitter, which reads on the claimed "upper casing", and receiver, which reads on the claimed "lower casing" (see abstract).

It would be obvious to one skilled in the art to modify the combination of Hirayama, Weissshappel, et al., Tamura, Takahashi and Takagi, et al. to extend the flexible keyboard into a connecting board in the application of a folding mobile telephone as taught by the Hitachi document, in order to conserve space and create a more flexible folding telephone. The resultant flexible keyboard/connecting board would read on the claimed "keyboard arranged and accommodated in the lower case is a flexible board" and "the flexible board shares its use as a connecting board".

Regarding claim 18, the combination of Hirayama, Weissshappel, et al, Tamura and Takahashi fails to disclose a flexible connector/key board.

Takagi et al. discloses a portable telephone with a flexible printed circuit board 8 that is a keyboard (see figure 2 and column 2, lines 14-20).

It would be obvious to one skilled in the art at the time of the invention to include the above flexible keyboard as taught by Takagi et al. in the combination of Hirayama, Weissshappel, et al, Tamura and Takahashi in order to aid in manufacturability and increase portability. The combination of Hirayama, Weissshappel, et al, Tamura, Takahashi and Takagi, et al. does not disclose that the flexible keyboard be used as a connecting board between upper and lower phone portions.

The Hitachi document discloses a folding telephone with a flexible printed circuit board assembly connecting the transmitter, which reads on the claimed "upper casing", and receiver, which reads on the claimed "lower casing" (see abstract), together reading on the claimed "a portion of said flexible board which is located at the hinge portion of the upper and lower case is used as a connecting a connecting board fro connecting the upper case and the lower case".

It would be obvious to one skilled in the art to modify the combination of Hirayama, Weissshappel, et al., Tamura, Takahashi and Takagi, et al. to extend the flexible keyboard into a connecting board in the application of a folding mobile telephone as taught by the Hitachi document, in order to conserve space and create a more flexible folding telephone.

Claim 13 rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama in view of Weissshappel, et al, Tamura and Takahashi as applied to claim 11 above and further in view of Ikenouchi, et al. and Mendolina (US005751804A).

Regarding claim 13, the combination of Hirayama, Weissshappel, et al, Tamura and Takahashi discloses a portable telephone set with a battery pack 26 which reads on the claimed "battery terminal", a mouth piece<sup>12</sup>, which reads on the claimed "microphone", and ten keys 21 which read on the claimed "key diaphragm" and a vibrator 7, which reads on the claimed "vibrator" mounted on the calling section, which reads on the claimed "lower case". The calling section is one of two sections of the folding-up type portable telephone, so all the above are inherently folded before storing. The combination of Hirayama, Weissshappel, et al, Tamura and Takahashi does not disclose an LED for keys.

Ikenouchi, et al. discloses a wireless telephone with light-emitting diodes for illumination, which reads on the claimed "LED for keys" (see column 2, line 23).

It would be obvious to one skilled in the art at the time of the invention to add the above LEDs as taught by Ikenouchi, et al. to the combination of Hirayama, Weissshappel, et al, Tamura and Takahashi in order to provide illumination for use in the dark and increase visibility of the keys. The combination of Hirayama, Weissshappel, et al., Tamura, Takahashi and Ikenouchi, et al. does not disclose the location of a buzzer.

Mendolina discloses a flip phone with a buzzer (see column 1, line 56-57). Although the location of the buzzer is not specifically disclosed, it would be obvious to one skilled in the art at the time of the invention to locate the buzzer in the lower casing in the combination of Hirayama, Weissshappel, et al., Tamura, Takahashi and Ikenouchi, et al. in order to preserve space or aid in manufacturability.

9. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirayama in view of Weissshappel, et al, Tamura and Takahashi as applied to claim 11 above, and further in view of Roloff.

Regarding claim 14, the combination of Hirayama, Weissshappel, et al, Tamura and Takahashi fails to disclose a narrowing of the phone casing in the vicinity of the portion connecting upper and lower casings.

Roloff discloses an inflatable handset 14 that is narrower in the center as can be seen in figure 1.

It would be obvious to one skilled in the art at the time of the invention to modify the combination of Hirayama, Weissshappel, et al, Tamura and Takahashi with Roloff to include the above narrowing of the handset in order to conform better to the grip of a hand.

### ***Response to Arguments***

Regarding the applicant's argument of claim 1 that Hirayama in view of Azartash et al. fails to disclose an I/O section, the combination of volume adjust buttons, an input to the phone and the display, an output from the phone reads on the claimed "I/O section" as discussed above. Takahashi has been added to overcome the failure to disclose the amended "control processing section".

In response to applicants' argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the

references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the use of a vibrator to aid in alerting users of a phone call is in the knowledge generally available to one of ordinary skill in the art.

Regarding the applicants' argument of claim 2, Azartash discloses a keypad with buttons in the vicinity of the display. Morgenthaler has been added to expressly disclose menu navigation

Regarding the applicants' argument of claim 3, Hitachi clearly discloses the use of "a flexible printed board assembly connecting the transmitter and receiver effectively" (see abstract), which reads on the claimed "the flexible board shares its use as a connecting board for connecting the upper case and the lower case". Takagi et al. discloses a flexible printed circuit board 8 that is a keyboard.

In response to applicants' argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation can be found in Hitachi "Advantage – enables incorporation along with case as single unit. Provides easy assembling, water proof and shock resistant nature".

Regarding the applicants' argument of claim 10, Roloff discloses a foldable telephone with a narrower section in the middle of the phone (see Roloff figure 1 and abstract). When combined with Hirayama and Azartash, the resultant mobile phone would be a flip phone as discussed in claim 1 with a narrower section in the middle, which reads on the claimed "portion of the upper case and the lower case in the vicinity of a section being mechanically connected with respect to each other is formed in a narrower configuration than a remaining portion".

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine can be found in Roloff: Advantage- "keyboard to be handled easily".

Regarding the applicants' argument of claim 11, Takahashi discloses the amended "control processing section" included in an upper case (see figure 1).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in

the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, in the motivation to combine with Weishappel, the use of a connector for a hands-free user interface is in the knowledge generally available to one of ordinary skill in the art. The motivation to combine with Tamura, the addition of a vibrator section to aid in alerting users of a call is also in the knowledge generally available to one of ordinary skill in the art.

Regarding the applicants' argument of claim 12, Hitachi clearly discloses the use of "a flexible printed board assembly connecting the transmitter and receiver effectively" (see abstract), which reads on the claimed "the flexible board shares its use as a connecting board for connecting the upper case and the lower case". Takagi et al. discloses a flexible printed circuit board 8 that is a keyboard (see figure 2 and column 2, lines 14-20).

In response to applicants' argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation can be found in Hitachi "Advantage – enables incorporation along with case as single unit. Provides easy assembling, water proof and shock resistant nature".

Regarding the applicants' argument of claim 14, Roloff discloses a foldable telephone with a narrower section in the middle of the phone (see Roloff figure 1). When combined with Hirayama and Azartash, the resultant mobile phone would be a flip phone as discussed in claim 1 with a narrower section in the middle, which reads on the claimed "portion of the upper case and the lower case in the vicinity of a section being mechanically connected with respect to each other is formed in a narrower configuration than a remaining portion".

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to combine can be found in Roloff: Advantage- "keyboard to be handled easily".

#### ***Allowable Subject Matter***

Claims 4 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art applied fails to disclose a foldable mobile communication terminal wherein a battery terminal, a microphone, a key diaphragm, and a LED for keys are all

mounted on portions of one surface of the flexible board and said portions are folded or turned down before storing in the lower case. The prior art applied also fails to disclose a foldable mobile communication terminal wherein a battery terminal, the vibrator, a microphone, a buzzer, a key diaphragm, and a LED for keys are all mounted on a same surface of the flexible board and folded or turned down before storing in the lower case.

***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bryan J Fox whose telephone number is (703) 305-0997. The examiner can normally be reached on Monday through Friday 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on (703) 305-4379. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

BJF

*Nguyen Vo*  
4-19-2004

NGUYEN T. VO  
PRIMARY EXAMINER